

THE URBAN PROCESS

The process of development is based on the following key assumptions.

of development)

2. ~~The~~ The process is piecemeal. That is, it takes place step by step, and not only buildings, but open space, and pedestrian paths, and even roads, also grow piecemeal, ~~and the various things~~ all in parallel. The basis for this assumption is given in Appendix 2.

~~1. The total area, contains some approximately 25 acres, or 1,000,000 of land. We assume that this land will be developed to a certain extent. We assume that in its finished state, this land will be 40% built, with the remaining 60% devoted to roads, paths, parks, and courtyards. There will therefore be approximately 400,000 sf of built land. We assume that this land will be built up almost entirely by 3-6 story buildings, with an average height of 4.5 storeys, making a total built area of 1,800,000 sf of space. If we assume an overall average construction price of \$60/sf, this represents some \$110 million of construction. (The detailed reasoning behind this assumption is explained in Appendix 1)~~

numbers are fictional
real # must
be determined

1. The total area, contains ~~some~~ approximately 25 acres, or 1,000,000^{sf} of land. ~~We assume that this land will be developed to a certain extent.~~ We assume that ~~it~~ in its finished state, this land will ~~be~~ be ~~at~~ 40% built, with the remaining 60% ~~devoted~~ devoted to roads, paths, parks, and ~~some~~ courtyards~~xxx~~. There will ~~be~~ therefore be approximately 400,000 sf of built land. We assume that this land will be built up ~~with~~ almost entirely by ~~4-6~~³⁻⁶ story buildings, with an ~~average~~ average ~~height~~ height of 4.5 storeys, making a total built area of ~~1,800,000~~ 1,800,000 sf of space. If we assume an ~~overall~~ overall average construction price of \$60/sf, this represents ~~some~~ ~~22x~~ \$110 million of construction. (The detailed reasoning behind this assumption is explained in Appendix 1)

3. To define the piecemeal character of the process precisely, and to regulate it, we require that the total construction of \$120,000,000 be divided up as follows:

~~Twenty~~ ~~sixty~~ ~~million~~ ~~million~~ ~~million~~ large projects, ranging in size from 1-5 million each, with an average cost of 3 million
~~One~~ ~~hundred~~ ~~million~~ ~~million~~ ~~million~~ medium projects, ranging in size from 200,000 each, with an average cost of 200,000 each
~~Five~~ ~~hundred~~ ~~million~~ ~~million~~ ~~million~~ small projects, with an average cost of 20,000.

Twenty large projects, with an average size of 3 million ranging in size from 1 to 5 million each 60 million

One hundred medium projects, with an average size of 300,000 each, ranging from 100,000-500,000 ^{large med is 5 story 30x50} 30 million

Five hundred small projects with an average size of 30,000 each, ranging from 10,000 to 50,000 30, million

4. We assume these 620 projects will be built over a ^{fifteen - ?} ~~year~~ year period, with an average of some ⁴⁰ ~~40~~ projects per year.

5. We assume that the ~~area~~ ^{area is developed as a mixed use area,} and that individual projects will ~~include~~ include office space, residential space, commercial, in the proportions given as follows. This reflects, as nearly as possible, present thinking in San Francisco, ~~and~~ of various interest groups.

6. We assume that the projects will ^{be} ~~be~~ have ^{all} ~~the~~ ^{by a certain} personal and human character which we summarise by calling them "visions". This distinguishes them from speculative projects, done by absentee landlords, or property developers, and requires that each projects is a personal thing, done communally or singly, by someone, or by some group, who above all, has the welfare and wholeness of this area at heart. The detailed definition and nature of such a "vision" is described in appendix ~~ix~~ 6.

7. For the same reason, we ^{make} ~~assume~~ certain fundamental assumptions about land tenure. ~~(a)~~

(a) that land cannot be privately owned, but that all land in the area is held by the City of San Francisco, and leased on 99 year leases, to individual building owners. ~~(b)~~

^(b) ~~That~~ That the entire area is under the governance of some identifiable "community". ~~(c)~~

^(c) ~~That~~ That only people who ^{live in} ~~live in~~ this community are allowed to invest in it. These concepts are fully explained in Appendix 7.

8. We assume that the development of a ~~coherent~~ ^{coherent} system

of urban open space, ~~gardens~~ gardens, courtyards, pedestrian promenades, paths, ~~xxx~~ roads, and parking, is ~~assured~~ assured by the fact that each increment of construction must follow ~~the~~ certain rules, which are described in appendix 8. ~~(The urban game)~~ ^(The urban game) Essentially, ~~these~~ ^{these} rules ~~make~~ make sure that all buildings are ~~placed~~ ^{placed} to form beautiful useful and satisfying open space, ~~so that the development~~ ^{-- conceptually --} of space ~~takes~~ takes precedence over the development of ~~buildings~~ buildings, ~~with the result that the~~ buildings form a city...

9. In ~~particular~~ particular, we also ~~assume~~ assume the existence of certain general ~~rules~~ ^{agreements}, which govern the distribution of traffic and movement and open space. In particular, we expect that heavy through traffic will be kept away from the water, that major parking structures ~~will~~ will also be kept away from the water, and near the arterial road, that there ~~is~~ is a ~~series~~ series of main pedestrian walks, run from these parking structures, down to the water, and that the waters edge itself contain a series of concentrated nodes of development. Analysis of traffic which makes this possible, is described in Appendix 8.

The global structure is not taken care of - yet not a clear issue

possibly this will take care of structure in 8 must be totally worked on

this has developed this more must be tested

10. We assume that the design of individual buildings, itself follows certain general rules, which guarantee a coherent and satisfying structure within the buildings. These rules, which vary for each are specific to each major building type, and are given in appendix 9 10. In essence, they guarantee that the building can be designed by its users, at various different appropriate levels...

this needs a lot of work fits together with number 10

11. Further, we do assume that each building is designed, by its own users, to whatever extent is possible and appropriate. This requires certain very specific procedures for the design of buildings. They are explained, in detail, in appendix 11.

not serious unsolved problem

~~12. We assume that each building is given~~
12. We also assume an overall "language" of construction, which guarantees that the different buildings are built in a manner, which preserves the overall coherence of the area, at the same time that it allows each individual building to have its own expression. Appendix 12.

13. And we assume, further, that each building will have a type of construction which allows individual ornament and expression. Given the fact that this is generally not possible, under the terms of present day construction procedures, we have provided a certain simple ground rules, which help the builders of each building to reach this goal, and to make each building personal and beautiful.

14. We assume, finally, that the steps of this process are administered by a board, appointed by the community. ~~Any Each individual project which is proposed to the board, is played through, by~~

~~14. We assume, finally, that the individual building increments are~~

This means, that any building project which is proposed by an ~~individual~~ individual owner, or by a group of owners, comes to the board, who first check its compliance with the steps of the process that have been outlined, above, and also check it ~~against~~ against certain other ground rules, to ensure compliance with public health and safety, fire regulations, light, air, access, parking, and so on. This process will entirely take the place of ~~these~~ ~~or~~ ordinances ~~no~~ present day zoning and planning ordinances. In ~~an~~ order to make this possible, we assume that the area is designated as a special development ~~district~~ ^{district}, under the terms of present day ~~planning~~ planning law. The provisions ~~ad~~ administered inside the district are explained fully in appendix 14.

To Help you

ROUGH AREAS AND SIZES OF BUILDINGS OF DIFFERENT PRICES.

At ~~£~~ \$60/sf, and ~~four storeys~~ ^{various heights}, we get ~~\$240~~ ^{the following prices} for each square foot of ground area covered, so:

| | FOUR STOREYS | FIVE STOREYS | SIX STOREYS |
|-----------------|-------------------------|-------------------------|-------------------------|
| \$100,000 gives | 400 sf of <u>ground</u> | 330 sf of <u>ground</u> | 280 sf of <u>ground</u> |
| 200,000 | 800 | 660 | 550 |
| 300,000 | 1200 | 1000 | 830 |
| 500,000 | 2000 | 1300 1700 | 1400 |
| 1,000,000 | 4000 | 3300 | 2800 |
| 2,000,000 | 8000 | 6700 | 5500 |
| 3,000,000 | 12000 | 10000 | 8300 |
| 5,000,000 | 20000 | 17000 | 14000 |

Larger buildings may be considered in special cases,

DISTRIBUTION OF PROJECT SIZES

The first answer to the question: What must we do next, to make the system more whole, is an answer which describes the ~~distribution~~ ^{distribution} of the next years' ^{total} investment, ~~xxx~~ by quantity and area.

It is ~~commonly~~ ^{commonly} assumed that the random packets of development stimulated by the combination of taxes, interest rates, and investment opportunity, is necessarily the best. But of course this is not so, simply because the things that "need to be done" at any given moment, are not all equally profitable, in the ~~short~~ short run, for ~~any given~~ the particular investors who happen to have the opportunity for investment.

~~On the~~ On the other hand, ~~the~~ we assume a system in ~~which~~

which the great proportion of funds available, will indeed come from private sources - not government sources.

We must therefore ask, how we can guide, and shape, the natural process of capital improvements, in such a way that most nearly approximates the ideal health of the system and is yet compatible with private motives, and private sources of funds.

Note. We distinguish ~~xx~~ between private motives, and the banks motives. Often private investors are merely channels for banks investments: but this once again, has little to do with the process we are concerned ~~xxx~~ about.

~~The question~~ The question "what to do next" ~~has~~ must be asked and answered at ~~at~~ several different scales.

There is the question, with respect to the largest unit: the local community.

There is the same question with respect to some much smaller neighbourhood.

And there is the same question, as a question about repair to individual buildings.

Let ~~us~~ us imagine a budget, in which ~~each~~ there is a certain percentage of annual renewal at each of three different scales.

In order to make the system whole, and keep it whole, there must be substantial renewal funds, flowing at each of these different scales, every year.

§

RULE SYSTEM 1

THE RULES OF PIECEMEAL GROWTH

As

~~As we have said ~~to~~ already, briefly, in the previous chapter,~~

~~the demands of wholeness require that a portion of a town be built up gradually, piecemeal, from different increments. A single act, or even a small number of large acts, cannot, in any practical way, provide the for the complexity of adaptation which is typical of wholeness.~~

This is easy to understand in any organic system. It is inconceivable that an organism, for instance, could be built up very rapidly, in a single act... because the it is precisely the slow adaptation of cells to ~~another~~ one another, which makes possible, their very subtle and harmonious intertwining.

Specifically,

~~As we have said~~ in the case of a town, it is the adaptation of different acts of building, to one another, which allows the progressive healing of the whole. We can be sure, that any ~~one~~ given act is imperfect. ~~The~~ But if each act is merely one small item, in a continuous chain of acts, then each act can take up the mistakes of deficiencies, in the order produced by the previous act, and the system is able to grow, harmoniously, always correcting itself, always reaching for order, and always going towards it, in spite of the imperfections of its individual contributions.

In order to guarantee ~~this~~ the piecemeal nature of the growth, we have a system of ^{four} ~~three~~ rules.

1. The first rule simply says that no building increment may be too large.

~~Rule 1. No building increment may be too large. Specifically,~~

Rule 1. No building increment may be too large. Specifically, we do not allow any building increment of more than building complex of more than \$5 million, or about 100,000 square feet.

2. The second rule guarantees a reasonable ~~mix~~ mixture of different ~~sizes~~ sized projects, with a predominance of ~~small~~ small projects, to make up for the fact that small projects have a smaller effect on the whole.

~~This~~ The theory of this rule has been described in considerable detail in The Oregon Experiment, chapter 2, In the ideal version, the rule has a logarithmic nature, which requires that ~~the~~ the total amount of construction in small, ~~medium~~ medium projects is equal to the total amount in medium, and large... thus for instance, % million spent on one

| | | | | |
|------------------|------|--------|-----|---------------|
| large | Thus | Large | 1 | |
| | | Medium | 10 | |
| | | Small | 100 | (i.e. blocks) |

However, under the circumstances of our experiment this would have been impossible, and we replaced it with a much more modest rule. Namely:

Rule 2. ~~Then~~ Under the constraint provided by rule 1, large, medium and small projects are distributed as follows:

| | | |
|----|-----------------|------|
| 25 | Large projects | 15% |
| | Medium projects | 35% |
| | Small projects | 50%. |

This actually biases the project towards large projects, since it ~~means~~ means that the total area of large, medium, and small projects is distributed as follows:

Total square footage in large projects
Total square footage in medium projects
Total square footage in small projects

~~Under~~ For the general case we suggest that a rule which places more emphasis on small projects would be better.

In practice, the way this rule was used was that a running ~~total~~ total of large medium and ~~a~~ small projects was kept, and new projects were accepted or rejected if the current total distribution tended to get too far away from this target distribution.

results of ~~the~~ applying
We may see the ~~application~~ of this rule, in the following graphic sequence, of squares, which shows, the actual sequence of projects, by area, which appeared in the simulation.

~~The~~ 3. The third rule guarantees a reasonable distribution of functions, in the piecemeal growth. In a conventional master plan, the ~~xxx~~ respective areas of different zoning categories, guarantees a reasonable balance of housing, retail, office, industrial, park, transportation, parking, etc. ~~However, in a piecemeal process, it would be conceivable~~

However, in a piecemeal process, it would be conceivable that an entirely undesirable mix of functions makes its appearance, and this rule is designed to balance the create a reasonable balance among functions. Like the second rule, this rule takes the form of an "ideal" distribution, together with a process which allows the rejection of projects which ~~do not~~ threaten to take the distribution off course. Thus:

Rule 3. The distribution of functions in the development will have the following statistical distribution:

~~Housing~~ Housing
Retail
Office
Manufacturing
Public and communal facilities
Parking structures

At each moment during the life of the project, a bar graph shows the present ~~state~~ state of the distribution, and preference is given to those categories which are lagging behind.

In particular, this board will use the rules, laid out in the chapters which ~~from~~ follow, to ~~admin~~ decide whether or not a given project does actually contribute to the health of the emerging whole.

In this sense, we may say that this board has the function of administering the rules of the process, and of ensuring that the rules are followed.

In the simulation of the San Francisco Waterfront, ~~where~~ Chris, Ingrid and Howard ~~formed~~ acted as the board. This was especially important during the first half of the process, when the various participants in the simulation did not fully understand the rules... especially the deeper rules defined by ~~the~~ chapters 3,4,7 (visions, centering, and the emergence of larger structures).

However, later in the process, as the people involved in the process came to understand the rules more and more deeply, the piecemeal acts required less and less regulation, and came gradually to a sort of communal autonomy, in which the members of the community at large, were ~~the~~ entirely able to regulate their own acts, by using the rules. In many ways this was the most beautiful part of the process.

However, in the case of ~~the~~ a real community would also have to go through these two stages... first a stage, where piecemeal acts are regulated, by a board... and then a second stage, where the rules are ~~the~~ self imposed, and followed by all members of the community at large, as they become perfectly internalised.

The following bar graphs show the progress of the project, after ~~20~~ 20, 40, 60 and 88 projects, ending with the final distribution in the finished project. All quantities are ~~expressed in~~ given in square feet of construction.

My Pen .

~~RULE~~ RULES OF OPEN SPACE.

Very often, in todays cities, open space has become a left over, the area between buildings, a place ~~to~~ ~~be~~ ~~used~~ ~~for~~ ~~cars~~ ~~and~~ ~~parking~~ ~~lots~~, or, at best, a place to beautify with plants and sculptures.

~~It~~ Yet to create a living fabric, ~~the~~ ~~so~~ ~~called~~ "open space" is as important as the buildings, and experience shows, repeatedly, that the harmony, peacefulness, liveliness of a ~~city~~ city depends directly on the solidity, the "positiveness" of its ~~open~~ space, so that ~~the~~ each part of space, large or small, between buildings, is as solid, as definite, a seriously taken, as the most beautiful room.

~~The~~ ~~following~~ ~~rules~~ ~~apply~~ ~~this~~ ~~general~~ ~~principle~~ ~~to~~ ~~the~~ ~~layout~~ ~~of~~ ~~streets~~, ~~pedestrian~~ ~~paths~~, ~~public~~ ~~squares~~, ~~courtyards~~, ~~and~~ ~~gardens~~, ~~and~~ ~~gardens~~.

In order to make open space effectively, ^{its definition must} ~~its definition must~~ ~~precede~~ ~~the~~ ~~definition~~ ~~of~~ ~~buildings~~. This means that buildings are placed, above all, ~~to~~ in such a way as to create positive open space. ~~It~~

The following rules apply this general principle to the layout of streets, pedestrian paths, ~~public~~ public squares, courtyards, and gardens, ~~and~~ ~~gardens~~.

Further, each part of the outdoor space, is a well defined entity in its own right, with its own centers, its own boundary zone, its own feeling, its own character.

~~However, space is only formed by the actual location of buildings: it is only rarely that walls, hedges, trees, and other inexpensive items can be used to create space.~~

However, space is only formed by the actual location of buildings: it is only rarely that walls, hedges, trees, and other inexpensive items can be used to create space.

It is therefore necessary to formulate rules which work piecemeal, in such a way that as each new building increment, is introduced into the urban fabric, its location and shape, work to create more useful, positive, well-centered open spaces.

The following rules are intended to carry out this piecemeal plan. They are based on the patterns SMALL PUBLIC SQUARE, ACTIVITY NODES, PEDESTRIAN DENSITY IN PUBLIC PLACES, WALLED GARDENS, PEDESTRIAN STREETS, PROMENADE, COURTYARDS WHICH LIVE, BUILDING THOROUGHFARE, PARALLEL STREETS, LOOPED LOCAL ROADS, SMALL PARKING LOTS, BOUNDED PARKING, BUILDING HIERARCHY OF OPEN SPACE, EDGE, SOMETHING ROUGHLY IN THE MIDDLE, PATH SHAPE. Detailed functional arguments are given in those places.

CAR PATH NETWORK, ROAD CROSSING,

~~Whenever~~ In the ~~surrounding~~ area where a building is being placed, it is possible to define all of the following ~~entity~~ entities.

1. The nearest ~~major~~ very large open space.
2. The nearest medium open space.
3. The nearest line of pedestrian movement.
4. The nearest line of traffic.

~~First~~ First, if there is no major open space near the building, then begin the creation of such a place.
If there is no major ~~or~~ open space

XX APPENDIX 5

MIXED USE DISTRIBUTION BY PERCENTAGES

The following distribution of uses (percentages x represent percentages of built space), is ~~based~~ comes from consideration of present distribution proposed by various groups, including the city planning department, land use consultants, and the citizens commission on the waterfront ~~development~~ redevelopment.

Since all these different ~~groups~~ bodies agree, at least as far as orders of magnitude are concerned, ~~that~~ these percentages should not be controversial for anyone.

VISIONS

~~XXXXXXXXXXXX~~ When we face the fundamental question ~~of~~
"What" shall we build in a given place, where building
is to be undertaken. This question does not ask how it
is organised, how it is designed, what character it has in
its architecture - but simply, the most fundamental question
of all: WHAT IS IT, WHAT IS GOING TO BE THERE.

This question can be phrased also, what does the gap that
is there, call out for. What is needed there, to heal the
world around it.

In present day cities, this question is asked, and answered,
almost exclusively in economic terms. What can pay for itself
there, what can make money there. A consumer survey, or a market
analysis ~~is~~ will be undertaken (by the developer, or by the
bank which provides financing to the developer), and will answer
"Here a gas station will work; here a restaurant; here an
office building; here a warehouse; there public housing, ...and
so on".

~~XXXXXXXXXXXX~~ The products ~~of~~ which are built, after this kind
of answer has been given, are always ~~some~~ rather dead,
machinelike abstract, lifeless -- in short, uninteresting,
not exciting, ~~is~~ not vivid.

If we compare these products with the products of other ages, we ~~must~~ shall be forced to recognise that those in other times, have an entirely different overall character.

Even in the immediate past - the period of great industrialists, of filth, and money, and slave labor, there is still a quality which at least is more inspiring than what we have today.

Consider, for example the stockyards of Chicago, the Loop, the ~~smoky~~ New York waterfront, the coal ~~mines~~ mines of the Rhonda valley in Wales, ~~the~~ Les Halles in Paris, there is in all these cases a thrust, an excitement, a vision...

we may question the vision, we may have doubts about its social value - but it is, ~~nevertheless~~ nevertheless, undeniably human. It is the product of a personal vision, it is, even when it concerns money and profit, a vision of betterment, a vision of value, seen by an individual, and carried out with force.

In other times, we have examples of the same kind in other spheres. For instance, the great bridge of Isphahan, which where the Shah decided to build a place of enjoyment, where the people of Isphahan could live and play on the ~~water~~ water, is a product of vision. The story of his appointing the architect, under pain of death, and visiting him disguised as a ~~beggar~~ beggar, to make sure that the work was being correctly carried out, are all typical of ~~its~~ its visionary character.

Even a simple act, on a traditional ordinary farm, has the qualities of a vision.

Compare, for instance, a farmer coming down to breakfast one day, and saying to his family: Well, I think its time we built a bridge over big creek, before the winter rains come", with the decision of the Berkeley Public Works departmentto build a bridge ~~of~~ over a culvert over an overflowing ~~stream~~ stream hwich is flooding a ~~maximum~~ certain street.

The farmers act is an act of vision. He presents it in this way to his family. It is carried like that, in their minds; and it is built like that.

The bridge which the public works department builds is, ~~kw~~ something entirely different. It is ~~x~~ arrived at, not as a result of vision, but as a result of considered, channeled information. Studies are prepared. Each members of the engineers team, carefully protects himself against possible ciriticism, and minces his words in the report. It is built, in the end, purely as a bureacratic act, entirely without vision.

This ~~xxx~~ "vision" is a literal thing. It is not merely an "idea" or a "concept" , but a thing seen and felt in the minds eye, as in a dream, perhaps literally in a dream...

AND AS~~EA~~ RESULT, IT HAS INTENSELY PERSONAL FEELING. It is makes some feeling manifest, it carries us on a wave of life, makes us feel life, black, grey, or brilliant, but still it is life, in the Chicago stockyards, or in the shrine of Ise in Japan... they are above all, personal visions, carrying something from far beyond... never merely the product of bureacratic messages.

NOTE m)

Approval, land grants, and ~~xxxxxxx~~ zoning.

~~Supplemental~~

We assume that it is known, that any visionary project, large or small, can be built, some with private money, some with public money.

Those with private money, are proposed, and accepted or rejected, from among those currently proposed.

Those with public money, are also accepted or rejected, from among those currently proposed.

Thus we have a "bin" of projects which are up for consideration, ~~xxxxxxx~~ The committee reviews possible proposals, ~~xxxxxxx~~ ~~xxxxxxx~~ and then issues invitations, on the basis of these proposals, for more detailed models.

Unfortunate bureacracy. Can it be avoided. Does the wait, and the review procedure do any harm. ~~xxxxxxx~~ Porbbaly not if review is benign, oriented entirely towards question "Is it good for the community as a whole".

The criteria for review are entirely based on the well being of the whole. We examine the whole, and ask to what extent large scale patterns are being created, as needed, to what extent large structures, overall statistics, bad places in need of repair are being done by the proposal. ~~xxxxxxx~~

We thus issue a call for proposals, which makes it ~~ix~~ as clear as possible what we are looking for, and what we hope to receive.

~~Wxxx~~

If the proposal makes good use of land, we will tend to fund it. Mainly, we will ask whether it helps to repair, and make more whole, the entire community.

In particular, we shall also ask that it meet certain requirements to guarantee light and air to neighbourhooding projects (cutting off view, cutting off light from next door building, ~~xxxxxxx~~ not providing enough parking, not helping the ~~x~~ nearby streets to form....

We shall also ~~x~~ ask that, as a structure it help the emerging overall picture... that it contributes to the ~~xxx~~ emerging whole from the point of view of its appearance, its detailing, ... and so on.

APPENDIX 8
THE CREATION OF PUBLIC SPACE

~~the building is to be built~~

Once a vision has decided the functions and activity which is to occur, in some new increment ~~which is~~ of growth, this vision must be embodied in a building, or in some extension of existing ~~the~~ built space.

The placing ~~is~~ and arrangement of each new building increment, must ~~be~~ follow certain simple rules, which are different from those ~~which~~ which we are used to. For example, the new increment does not have to confine itself to some arbitrary "lot", since ~~the lot is~~ lots ~~are~~ ~~not~~ are not defined ahead of building increments.

Most important, the main purpose of the increment, is to generate the ~~structure~~ public space. All the intent of the rules in this appendix, is to produce a satisfying, useful, and inspiring arrangement of urban space; for it is, above ~~all~~ all the buildings, which create this space.

The most important general rule, therefore, is that each increment of building, does something to extend the whole, to increase the harmony of the whole, to ~~it~~ give it continuity, some new center, or the elaboration of existing centers, and overall simplicity and beauty of structure.

This general rule, is ~~is~~ made practical by five specific rules, which we now present. These rules, are themselves, given more detail, in the subsections which follow their first statement

~~APPENDIX 8~~
~~THE URBAN GAME~~

1. At each increment a ^{new} building ^{or part of a building} is placed on the site, This building is ^{helps to form a beautiful and harmonious} ~~to be a compact unity, which is both well~~ ^{shaped in itself, and also creates ~~new harmonious~~ beautifully} ~~shaped in itself, and also~~ ^{and it is itself a compact unity} shaped space next to it, & Each building increment extends the fabric of existing buildings, ^{and} ~~often~~ ^{touching} ~~is~~ ^{to} them. It is almost never a self contained entity, ^{and nothing more.}
 2. The building is always placed, and shaped, in such a way that it forms beautifully shaped pedestrian space, which helps to ~~contribute to~~ ^{elaborate the} ~~structure~~ ^{pedestrian} already partially present or emerging in the area.
 3. In addition, ~~the increment may also create a garden~~ ^{or garden} also beautifully shaped, small, ~~or~~ ^{or} large, and placed where they are more quiet, more intimate than the ^{nearby} ~~public~~ pedestrian space. Gardens are formed ~~perhaps~~ in no more than 30% of all increments.
 4. In addition, ~~if~~ the nearest road is extended to ~~give~~ ^{give} access to the new building: ~~if~~ ^{unless} the building ^{happens to be adjacent} ~~is~~ placed ~~next~~ ^{to} an existing road. ~~the~~
 5. And, finally, a ^{new} ~~parking~~ structure is built, ^{with each increment,} within 500' of the ^{increment} ~~building~~, unless the parking needs of the new building can be absorbed by an existing garage. (see below)
- ~~This parking structure is next to a road, and~~
~~is placed to help ~~contribute to~~ contribute to the form~~
~~of existing pedestrian space.~~

Incremental

1. At each increment, a building is placed on the site.

This building is to be a compact unity, which is both well shaped in itself, and also creates beautifully shaped space next to it (see sections 2 and 3).

The building should, in detail, follow these principles:

- (a) It is a compact unity, which has a solid shape, and a clearly designated center, ~~where~~
- (b) It has an entrance, in a clearly ~~designed~~ in a position which forms a natural "center" to the building (not necessarily its geometrical center), and which provides natural access from nearby pedestrian ~~to~~ areas.
- (c) ~~The~~ The building has "holes" in it which are both courtyards or ~~the~~ lightwells, or gardens...and no solid wing of the building is more than 40' wide, except when it ~~is~~ has a function which requires it (auditorium, gymnasium)
- (d) If the building can help to shield an existing parking structure, it should be placed in that way... and, when possible, on the ~~north~~ south of the parking structure, so that the building only loses its north light from the contact.
- (e) If possible, the building should touch some existing building, in ~~at~~ at least one place, thus forming a continuous solid fabric of buildings.
- (f) Each building has at least one wall, which is to be left solid (not pierced by windows), so that this can provide a place for the next building to be added on.

DETAILED CONSIDERATIONS IN
PLAYING THE URBAN GAME.

1. At each increment, a building is placed on the site.

This building is ~~xxxxx~~ may comprise a compact unity, ~~xxxxxxxx~~ with ~~xxxxx~~ "holes" (light wells and courtyards), ~~xxxxxxxx~~ (colored black in the diagram)

2. The building ^{is} ~~is~~ always placed, and shaped, in such a way that ~~xxxxxxxxxxxxxxxxxxxx~~ it forms beautiful pedestrian space (colored yellow in the diagram)

~~xxxxxx~~ In particular, ^{pedestrian space} the formation of the ~~yellow~~ ^{yellow}, must follow certain principles.

(a) It is not self contained, but helps to form existing ~~xxxxxxxxxxxx~~ elaborate structure already partially present or potentially visible in what exists.

(b) There is a system of "lanes" or pedestrian streets, which form a network, ^{between cert nodes} ~~xxxxxxxxxxxxxxxx~~

(b) there is a system of nodes, consisting of ~~xxxxxx~~ large, medium and small spaces. The large ones are ~~1500 feet~~ ~~apart, and~~ are approx ~~xxxx~~ 60 x 150, are 1500 feet apart. Medium ones, approx 40 x 60 are 900 feet apart. Small ones, approx 30 x 30, are 300 feet apart.

(c) There is a system of lanes, or pedestrian streets, which connect the nodes. Major lanes run at right angles to roads... minor lanes run parallel to roads, and along roads, on one side of them.

helps to make a
~~structure~~

(d) Above all, each increment of yellow is beautiful, ^{layer which} enticing, a place ~~where~~ which leads somewhere, which has the quality of wanting to stay there.

3. ~~In addition,~~ ^{There} are, occasionally, certain gardens. ~~These are green.~~ They are only added, when they make sense, functionally, with the building, ~~them~~ and when they are added, they represent the quiet, more private side of ~~xxxx~~ open space.

^{Gardens}
The ~~green~~ follows these principles:

- (a) ~~It is~~ ^{They are} always on the south of the buildings which it most obviously serves.
- (b) It is never next to roads (red), or parking lots (purple).
- (c) Each garden ~~xxxx~~ itself has a beautiful shape, and is attractive, not merely as a "^{piece}~~piece~~" of green, but as an ~~xxx~~ ornament, with its own lawns, flowers, trees, forming a clear and beautiful structure in itself.
- (d) Each garden, adds to, or enhances, some structure that was there before, in embryo.

4. In addition, each building must be served by a ~~xxxx~~ road. The roads are ~~represented~~ ^{represented} by red. Roads are built, incrementally, as they are needed, ~~xxx~~ to serve buildings. If there is already a road ~~close~~ ^{within} touching ~~the~~ ^{building} proposed site, no new increment needs to be built. If there is no road serving the building, then a new section of road needs to be built, ~~wxxx~~ bearing the following principles in mind:

The roads must ~~be~~ meet the following specific conditions.

~~Every road must be built on a major or minor road.~~

~~Every road must be built on a major or minor road.~~

~~Major roads must be at least 60 feet wide and minor roads must be at least 20 feet wide.~~

(a) Every road that is built is either major or minor.

A major road is 60 feet wide, and a minor road is ~~20~~³⁰ feet wide.

(b) Every road is connected to a major road.

(c) At least some part of each building, is directly adjacent to the road ~~which serves it~~ which serves it.

~~When you leave a parking structure, you can always see the entrance of the building which that parking structure serves.~~

~~When you leave a parking structure, you can always see the entrance of the building which that parking structure serves.~~

~~(d) When you leave a parking structure, you can always see the entrance of the building which that parking structure serves.~~

APPENDIX 9

AGREEMENTS ABOUT URBAN STRUCTURE

In order to create a coherent and simple structure in the area, we make the following general assumptions:

1. At intervals along the waterfront, in special places, there are small squares, or ~~or~~ open space; ~~the squares are separated by~~
~~by~~
2. These are separated by a much narrower promenade, so that as one walks along the water, every now and then it "opens out".
3. There is a main line of pedestrian movement, leading down to each one ~~of~~ of these waterfront squares.
4. Somewhere in the middle of this line of movement, there is a wide ~~inland~~ "inland" square, where the pedestrian path opens out, to create the hub of an identifiable neighbourhood.
5. Vehicular ~~movement~~ movement in the site is ~~mainly~~ away from the water, and mainly parallel to the water, and at right angles to these lines of pedestrian ~~movement~~ movement, thus along the water, some 500 feet back from the water...

~~XXXXXXXXXX~~

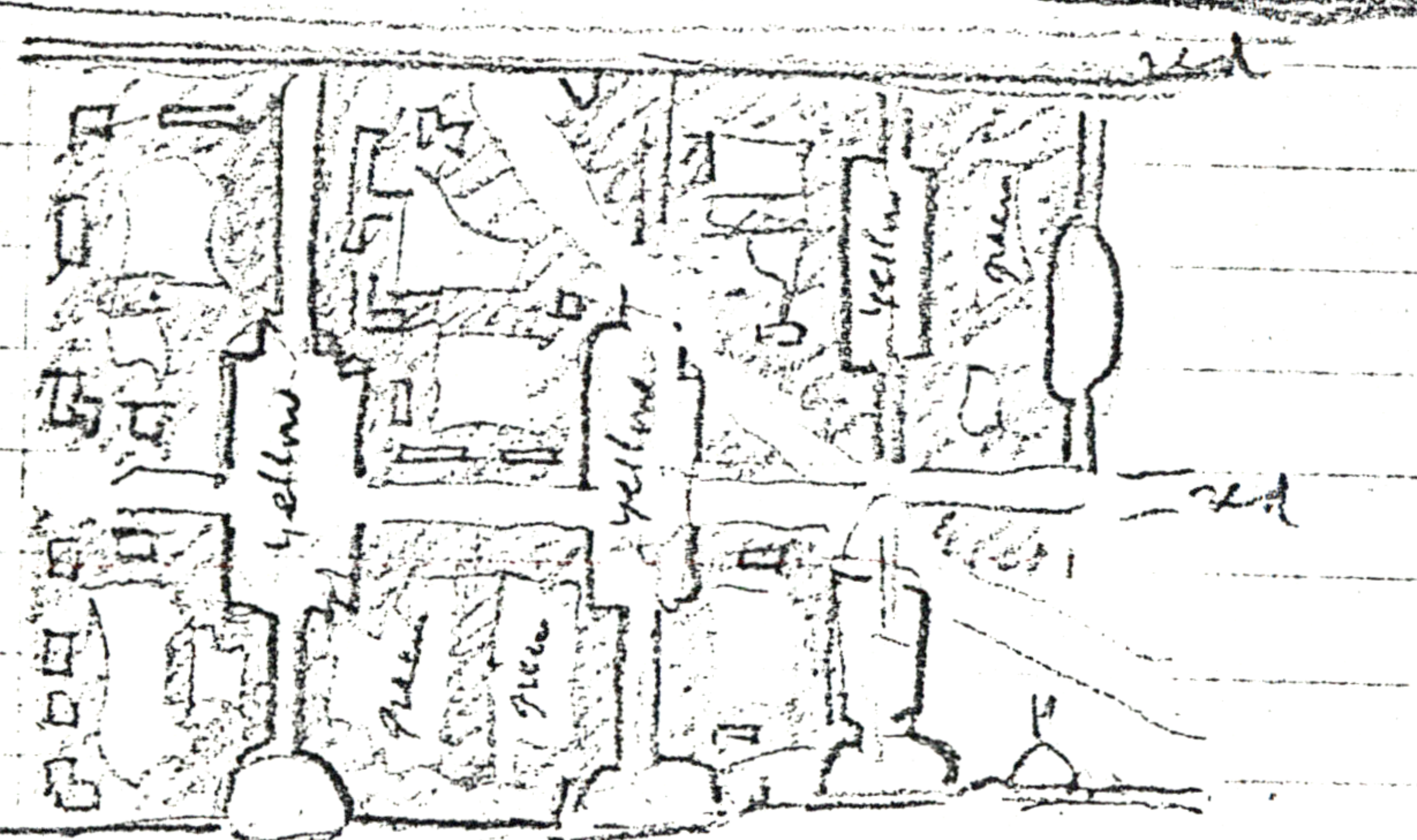
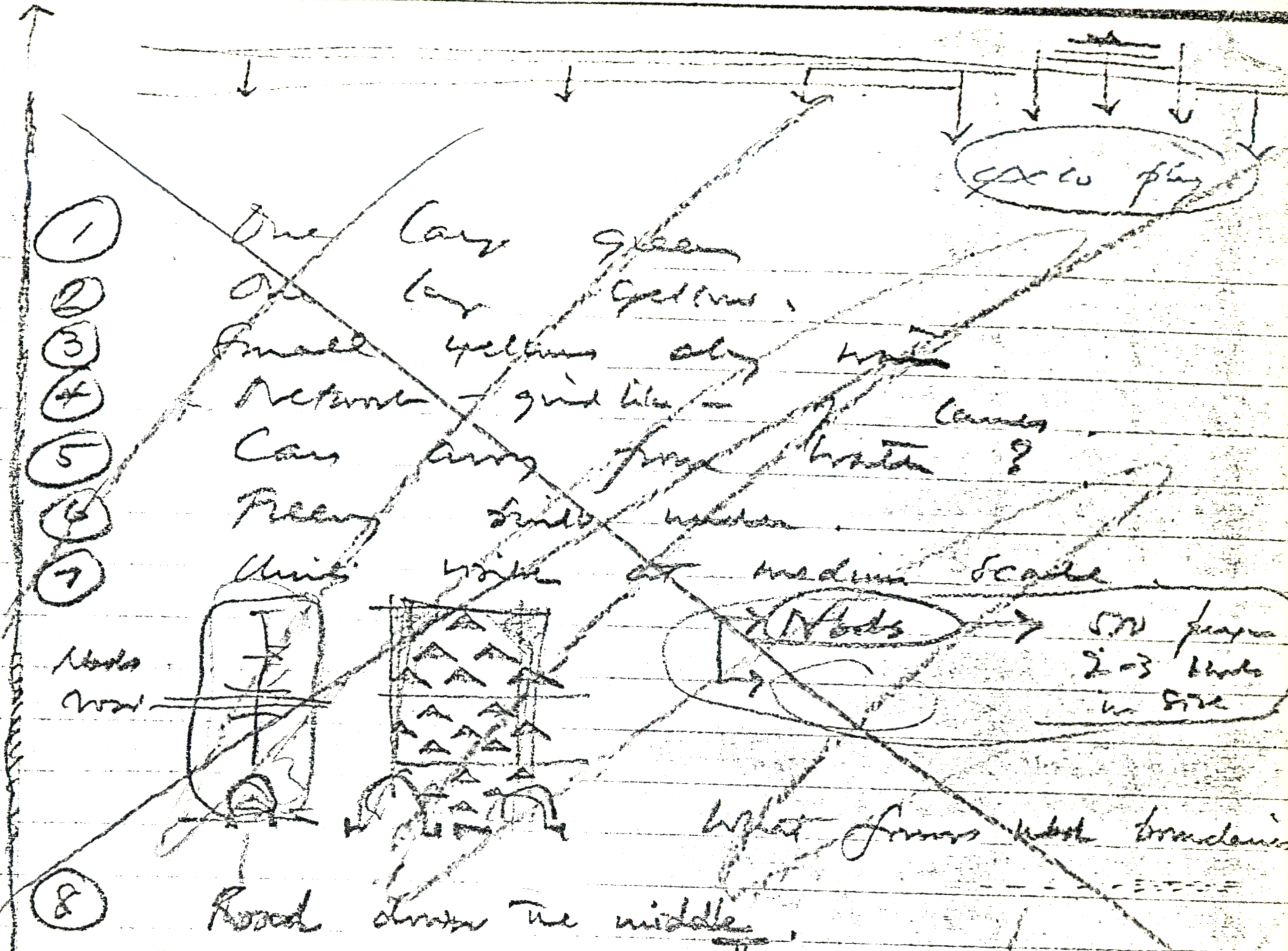
6. There are parking garages are concentrated along the inland side of the whole area, thus along ~~x~~ Spear street, giving access to the different pedestrian walks that lead down to the water.

7. ~~XX~~^{The} lines of pedestrian movement, and the road which bisects the site, parallel to the water, together divide the site into a number of "blocks". Each of these blocks, is surrounded by buildings, which entirely form the pedestrian space already defined.

~~am~~

8. Further, at the heart of each of these ~~in~~ "blocks" there is a ^{garden} ~~XXXXXXXXXXXX~~. The building thickness ~~XXXX~~ which surrounds each ~~XXXXXXXXXXXX~~ garden, is some 100 feet thick on the average, and the garden itself ~~XX~~ may also be further cut up by these 100 ~~xxx~~ foot wide swaths of ~~xxx~~ building.

9. Within each 100 ~~xx~~ foot swath of building, there are further ~~xxx~~ subdivisions formed by courtyards which pierce this swath, and bring light to buildings, and allow the thick swath of building mass, to be formed by wings of light, no more than 40 feet wide.



- ① Spots along water edge
- ② One path bank from a spot at 75 degrees to water
- ③ Large greens or squares in middle of this path
- ④ Spacing area is for a courtyard or garden
- ⑤ Wings around these gardens, are the main structure by broken series of courts.

Big

32
3" to 10'

54"



SKETCH

S,

STARTING POINT

~~AGREEMENT~~

AGREEMENT #1

The first point of development

Several of us have been to the site, ~~making~~ simply asking the question :Where is it most natural, to take the first step.

Various possible points suggest themselves: the area between Hills ~~brothers~~ and pier 24, ~~the~~ a spot roughly where Steuart and Howardstreets intersect, but the one which establishes itself most clearly of all, is the end of Steuart street, ~~where~~ where it ~~intersects~~ intersects Mission. This seems very clear as the most natural entrance to the site, and also the most natural ~~the~~ gateway, and we reach a common decision that the first growth ~~will~~ should happen in this area.

S₂ garden

AGREEMENT 2

The garden south of the hotel.

At this stage, the ~~gateway~~ gateway and the hotel have been built. During the development of the hotel plan, when Jim explained the idea of a private garden for the hotel, ~~this garden~~ ^{this garden} was originally closed off ~~to~~ to the south, by a solid building. However, we rejected this, because it formed a wall, which did not reach out and invite something to happen to the south. We first asked Jim whether he ~~was~~ could see this garden as a communal garden, reaching out towards the south. When he explained that it was necessary for the ~~w~~ to keep the garden private, for the hotel guests, we then ~~asked him that this~~ suggested that this small ^{private} garden, lead directly, through a gate or opening, to a much larger public garden, which does reach out towards the south, and will encourage something positive to happen around it.

This large garden, is still however, imagined as a garden, that is, not as a park. It is not wide open to the street, but ~~is~~ almost completely enclosed.... and reached from by various small holes or passages which allow it to be ~~seen, and reached, x from~~ seen, and reached, x from Steuart street.

S₃ parking

AGREEMENT #

A long thin parking garage, on the west side of the site.

At this stage, the park

The hotel has already made it

The construction of the hotel, has already created a need for some 200 spaces. Additional pressure on available parking has been created by the development of apartments and offices, and the capacity of the present parking garage on x street, has ~~been~~ run out. It is therefore necessary to build ~~an~~ a second garage.

There is already general agreement that this garage should be along ~~the~~ A Spear street, on the west side of the garden. which is dveloping. ~~However,~~

However, careful examination show that there is not room to build a conventional garage, with two bays, since such a structure would have to be at least 95 feet deep... and ~~this~~ this would encroach so deeply on the garden as to destroy it. It is therefore necessary to find a way of building a one-bay parking garage, ~~is~~. To make it economically feasible, it is to be served by ~~fringed~~ hydraulic elevators, ~~and~~ with an electronic eye at each level, ~~making~~ so that elevators can indicate which floors have available spaces, and go straight o these floors.... A call goes out for this kind of garage, and the next project realieses it...

See pedestrian street

AGREEMENT 4

The main pedestrian street.

The gateway has ~~them~~ strongly suggests a very major function for the first block of Steuart street...

~~and~~

~~and~~

~~for~~

We ask ourselves, now, ~~what~~ how long this street should reasonably be. Artemis has suggested a Community ~~a~~ bank building, to be built to close off this street, and make it a clear, well defined axis, ~~be~~ by forming another gateway to some ~~an~~ space beyond... the question is, what is the right place for this second gateway.

We spend some time on Steuart street itself, trying to see where the most natural place is for this second gateway, both by standing at the first gate, and looking south, and then also standing in various possible locations for the second gate, and looking north, back to the first gate.

We finally ~~a~~ decide that the place for the second gate is just where the YMCA ends... and this then allows us to accept Artemis building, in this position, and to study the way that it develops the space beyond.

S₅ Main Square

AGREEMENT #6

A main square, in the middle of the site, facing the west-most grid pier, and therefore oriented an an angle to the site.

At this stage, with the project well begun, we start to ask ourselves where it is most natural to have a major square, some major open space which serves as the emotional "heart" of the ~~community~~ community.

We visit the site, and find that there is one place which speaks most loudly... it is a place roughly where Steu~~ar~~rt and Howard streets intersect~~xxx~~... We can even pinpoint the place rather exactly, on the present north-west corner of this street intersection. Standing at this place, one feels in touch with the entire site... and it is a most natural to imagine oneself standing at the back of a large square, facing the ~~xxx~~ bridge.

The ~~xx~~ best orientation of this ~~sa~~ square is unexpected. As one stands ~~xxxx~~ there, ~~xxx~~ one instinctively faces the westmost pier of the bridge... it is partly the bridge itself, and partly the ~~xxx~~ desire to face south, towards the light and the sun, which create this condition...~~xxxxxxx~~ it is unequivocal...

but the effect of this clear message which we ~~xxxxxxx~~ receive from the ~~xx~~ site, is that the main ~~xx~~ square will not be oriented parallel to any of the existing grid lines, but at an angle, almost at 45 degrees to them, at an angle which seems peculiar, and has a major ~~xxx~~ immense impact of the on the future of the growth.... it is clear that this one perception will play a colossal ^{and unusual} role in organising the site...

But we check it and recheck it, and everyone who goes there agrees that it is so... so we decide the rough position of the square...

baths, ~~and perhaps extending~~ going as far back as 8 Sturart street,
and perhaps also extending some distance, ^{small} not very far, on the other
side of the baths.

~~One~~ It must be understood that this grid, though "plan-like",
is still essentially motivated by the centering process. It is
not ~~merely~~ merely a plan, for an unplanned area. What has
happened here, is that the particular events preceding this
moment, have created a situation which is sufficiently lacking
in structure, so that some very simple s-structure is needed to
make it feel calm. ~~This~~ This is made even more essential, by the
fact that the baths, and the main square behind the baths, are
~~or~~ oriented at such an extreme angle to the water... necessarily
so, because of the orientation to the south, and the view of the
bridge.... but this extreme angle, and its slightly strange
character, again call out for some extreme simplicity, ~~in~~
and for an area of calm, in the areas immediately surrounding
it. It is the response to this situation, which has, called forth
the vision of ~~the~~ this grid of narrow lanes, and houses .

APPENDIX 10.

RULES FOR LAYOUT OF A ^{3-6 STOREY} BUILDING

The following system of rules, can be used to lay out any large building ranging in height from 3 to 6 stories high, and covering a ground area of from 300 square feet, to 50,000 square feet.

However, it will not, usually, be necessary to use all the rules, ex. Each building type has special requirements, which make some of the ~~following~~ rules relevant, and others irrelevant. It is therefore necessary to begin by deciding which rules are relevant, and which new rules might have to be inserted for special problems associated with special buildings, we ask that each building proposal, have a tentative list of rules attached to it, and that we then agree on this list, before design of the building takes place.

public space ^{process} ~~masses~~

1. As part of the ~~urban~~ ~~process~~, determine the site of the building, its frontage, and its approximate ground plan.

2. With knowledge of the total square footage needed in the building, and the height of neighbouring buildings, decide the ~~building heights~~ ^{number of stories}.

3. ~~3.2~~ If the building has a main part, ~~and subsidiary~~ ~~parts~~ identify the location and height (and therefore volume ~~mass~~) of the main mass of the building.

INSERT

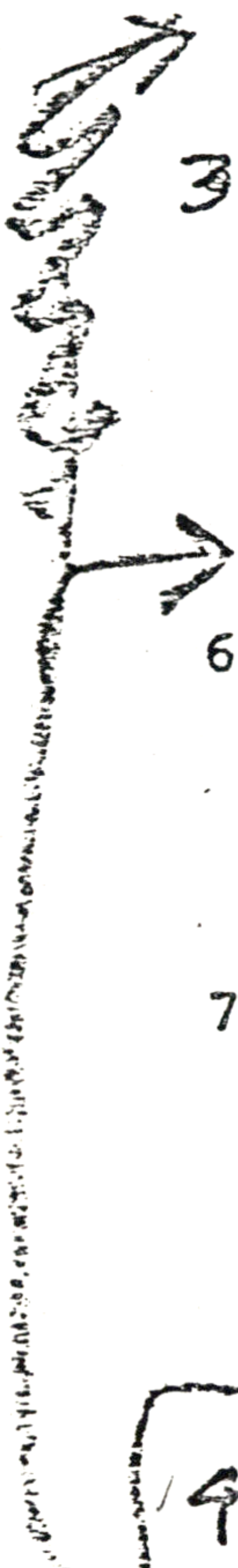
6. ~~6.1~~ Identify the subsidiary parts of the building, as ~~subsidiary~~ ^{subsidiary} masses.

7. ~~7.1~~ Determine the main direction of approach to the building, with respect to nearby movement, and locate the position of the main entrance.

4. ~~4.1~~ Determine the position of the main courtyard (if there is one) and any other courtyards.

5. ~~5.1~~ Determine the position of any major gardens, and make sure that their position is such that they will get at least a reasonable amount of sunlight.

8. ~~If any of the buildings volumes are more than 40 feet wide, insert light wells in appropriate positions, to create wings of light, so that the building is not made up entirely of wings, which are less than 40 feet wide.~~



8. ~~8m~~ Locate ~~the main entrance itself, and,~~ the entrance lobby as a major space inside the entrance. ~~xx~~ In many cases this lobby may be very large, and more than one storey high.



9. ~~9m~~ Locate any indoor streets, if there are any, as major streets, at least two storeys high, inside the building; in general these indoor streets must be top-lit, and therefore glazed.

10. If there are now any volumes of the building left, which are more than 40 feet wide, introduce light wells, ~~in~~ ~~them~~ in appropriate places, so that they are never the building is now made up of wings, lit from both sides, and never more than 40 feet wide.

11. Place all other major interior spaces, which have the same scale as the lobby... this would include, for instance, auditoria, main meeting rooms, ballrooms, gymnasium, etc. ~~wababmsabapacbxwhitthngbmmms~~ major waiting rooms... in general all major public spaces.

12. Place the main stair, (and elevators), if there is one in the building, and remember that this stair is essentially a volume of space several storeys high, not merely a diagonal line... so treat the staircase as ~~an~~ an open room, with a stair w around the edge of it.

look up
stair
cases

13. Place ^{windowed} galleries ^{or open} ~~and~~ arcades around those courtyards which are to serve as major circulation space, or leave circulation on the ground, but in all cases, arrange access to these courtyards, so that the main lobby leads to all of them in a clear manner.
14. ~~Place~~ If the ground floor ~~is to be used for shops or public functions, with access direct from the street, identify those zones which are to be used this way.~~
If part of the ground floor are to be used ~~as~~ for shops or public functions, with access direct from the street, identify those zones which are to be used this way.
15. Within the building, identify certain "nodes of intensity" at ~~the~~ key points in the circulation system. This means, certain natural gathering spots (coffee shops, tobacco ~~shops, gifts, food, bars, garden seats~~) should be placed at spots where all ~~the~~ paths in the building come together, so that they naturally invite gathering, and activity.
16. Determine the relative size of all the different departments ~~(the natural subunits in the building)~~ or apartments (whatever natural subunits are expected in the building), and distribute them, in the different parts of the building, ~~with~~ ~~if they are~~ ^{will} If these departments belong to users, then allow users to choose locations in the building. Units do not need to be confined to one floor... in ~~a~~ fact, in many cases, it will be very good to have whole units ~~occupying~~ occupying vertical swaths or chunks of space in the building.

17. ~~minima~~^{If} any department or apartment has its own roof terrace,
and * so opens out onto the roof of a part of the building
which is lower, define these ~~xxxxxxx~~ terraces clearly now,
so that variations in the height of the building, are
fully understood and this stage.

19.

Whenever vertical seams exist, between adjacent departments, make it clear how this ~~wxxx~~ vertical seam will become visible in the finished building. It is probably useful to imagine that a well defined, and at least partly visible, structural entity, should coincide with each "department"... and you should begin to know how the traces of ~~xxxx~~ the various structural entities will be visible on the outside of the building.

In the case of apartments, for example, the different apartments should be visible as entities from the outside, and from the direction of approach. In the case of vertical departments, the ~~xxx~~ buildings should be visible as slender narrow ~~xxxxxxx~~ high buildings (the Amsterdam solution).

In the case of a more massive building, these departments may only be slightly visible. The stairs will probably help to define vertical units.

18.

~~xxxx~~ Locate the ~~xxxxxx~~ secondary stairs (and elevators)

~~xxxx~~ which serve the departments. These stairs must connect with the main lobby, via the system of galleries, which has already been ~~xxxxxxx~~ created. In the case of the apartments, the stairs may be exterior to the building. In some office cases, the stairs may give access to the ground, in such a way that they are directly accessible from the outside, ~~xxxxxxx~~... but ~~xxxxxxx~~ the stairs must always be easily accessible and explained, to someone who comes to the ~~xxxxxx~~ main entrance of the building, without his having to backtrack.

23. If the department has more than one floor, ^{how} ~~place~~ ^{place} ~~internal~~ stairs.

24. Place any small passages ~~needed~~ necessary to give access to rooms within the department.

25. ^{smaller} Place small rooms, ~~needed~~ individual bathrooms, store rooms, etc, ~~needed~~, in small left over spaces by previous decisions.

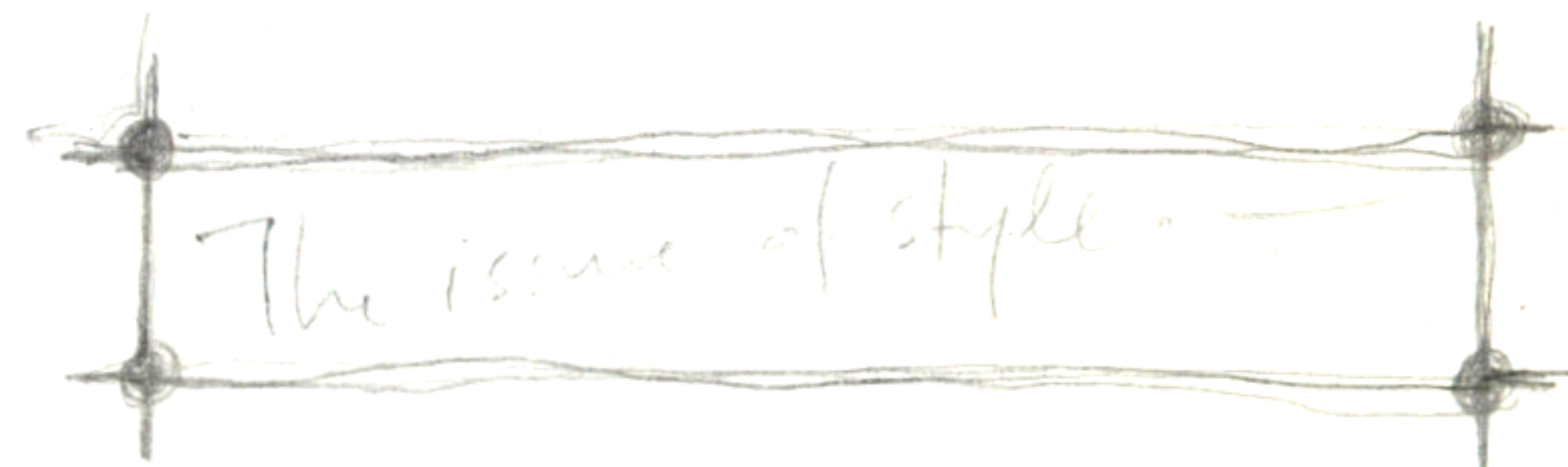
RULES FOR THE EXTERIOR OF BUILDINGS

1. There is a base story, which is higher than others, and marked by larger, grander, structure.
2. There is a roof line, marked by ornament, parapets, or something distinct, the whole band at least 4 feet ~~deep~~ high.
3. The floors are differentiated, by level, with a gradient of window size, floor height, or spacing of structural elements, ~~so that the building is not a uniform mass~~ with 1 different, 2 and 3 maybe same, maybe different, 3 and 4 ~~different again~~, or 4 alone, different again, and top different.
4. All buildings have ~~distinct~~ distinct windows, visible with window frames.
5. The ~~total~~ total area of window ~~frames~~ (measured to outside of frames) is between ~~30 and 50~~ 30 and 50 percent of ~~total~~ total wall area.
6. ~~There is~~ There is some additional structure, either ornament or substructure, visible, at the same scale as window frames or smaller.
- ! 7. ~~Arched windows are~~ Arched windows are encouraged on the ground floor, but discouraged on higher floors, ~~except where necessary~~.

8. All buildings ~~are~~ are made of reinforced concrete, or masonry (laid up ~~with~~ concrete blocks), painted or plastered or left natural. No prefabricated concrete ~~elements~~ components larger than ~~than~~ blocks or beams.

On

9. Bay sizes ~~are~~ within one building are the same, except where there are specific, very powerful reasons for changing them.



RULES FOR CONSTRUCTION OF BUILDINGS

In order to create a certain harmony in the area, but without restriction on individual inventiveness, we ~~strongly~~ strongly recommend that buildings are built within the framework of the following structural conventions. These rules are not ~~an~~ absolute. The board will ~~not~~ consider buildings that are not built to these conventions... ~~however~~ provided that they are themselves harmonious, and contribute to the whole. However, to ~~make~~ make it easier to reach harmony, we provide the ~~following~~ following simple ground rules.

1. All buildings are to be built of ~~reinforced~~ reinforced concrete, or reinforced concrete ^{or reinforced brick.} block, ~~or~~. This essentially ~~excludes~~ excludes wood,^{or} steel, ~~and~~ as basic structural materials.
2. What is missing from Hubert, Jim, Bruce document, is any ^{new} way of defining the overall structural system...

vertical material around the edge (it then approaches a system of walls and columns...). The structural bay is, in almost all cases, a rectangle, although there may be occasional exceptions (circle, octagon, ellipse... etc).

In order to understand the building as a structure, we must therefore see it as a system of ~~xxxx~~ structural bays, which share vertical elements... (two adjacent bays).

Typically, but not always, a building is also made up of "floors"... that is a horizontal array of ~~xxxx~~ bays, with a uniform ceiling height.

And, in general, a bay will also have beams, that is a stiffened edge, to the floor, along at least two edges, and possible along all four.

When a building is not made up of uniform floors, this means that there are ~~xxxx~~ volumes, in the building, where the structural bays project, ~~xxxx~~ beyond the floor. There are two typical cases.

In one case, the bay extends through two ^{or more} complete floors. This does not drastically alter the set ~~of~~ up of floors, it merely creates a hole, but leaves the integral character of the floors intact.

In the other case, certain structural bays, stick through ~~them~~ have a different height from those next to them... in this case, the floor above is non-uniform.

There are then two cases.

In one case, the anomaly is correct by the next floor (the upper ceiling is lower), so that the two floor total bay, is once again fits into the overall grid of the building.

In the other case, the anomaly continues; this then creates a vertical rift in the building, since the floors in one section slide past those in the next section, and we have a vertical plan which separates the two buildings...

From this analysis, it seems that it is always possible to break the building down into distinct areas, which have, within them, a consistent layering of floors. Each of these

There is one additional type of anomaly. A certain ceiling may be higher than those next to it, but the lower ceilings have above them, duct space, or lightweight infill, or storage space... In this case, the anomalous bay is only anomalous, internally, and externally it is still a complete parallelepiped.

It is reasonable that each of these vertical volumes, within which there is a ~~xxxxxx~~ uniform system of floors, is visible from the outside of the building, and has its own distinct structural character... and that~~xxx~~ the planes which separate it from the next door building, play a major role, structurally...since we have continuity through all floors.

Within an area, where there are uniform floors, ~~xxxxxxxxxxxxxxxx~~ ~~xxxx~~ we have a system of structural bays on each floor; the vertical elements of these bays, from floor to floor, do not necessarily line up. To deal with these cases we have the following possibilities.

1. That every column ~~xx~~ in a bay, rests at least on the edges of the structural bay below. ~~xxxx~~ This means that To generate such a scheme, we merely follow the rule that the corners of all bays each ~~xxx~~ upper bay has at least four points which lie on the perimeter of a lower bays. Also, to increase the possibility of support, we start with bearing walls on each bay below, and remove on upper bays, only those parts of the perimeter which do ~~xx~~ not lie on walls below... as we go up, the total perimetetr of each bay decreases (statistically).
2. We have the possibility of creating a beam(or ~~xxxxxxx~~ stiffened rib ~~xx~~ over a vault) in cases where upper supports lie in the middle of lower level bays. In this case we start at the top, and create a system of such beams or ribs below...

Let us now consider a typical floor.

Let us now consider a typical superbay.

And within this superbay, let us consider a typical floor.

In order for this floor to possess an orderly structure, it will be necessary to construct a "grid" on the floor, which will define positions of major beams, columns and walls.

Note that the following definition of a grid, has

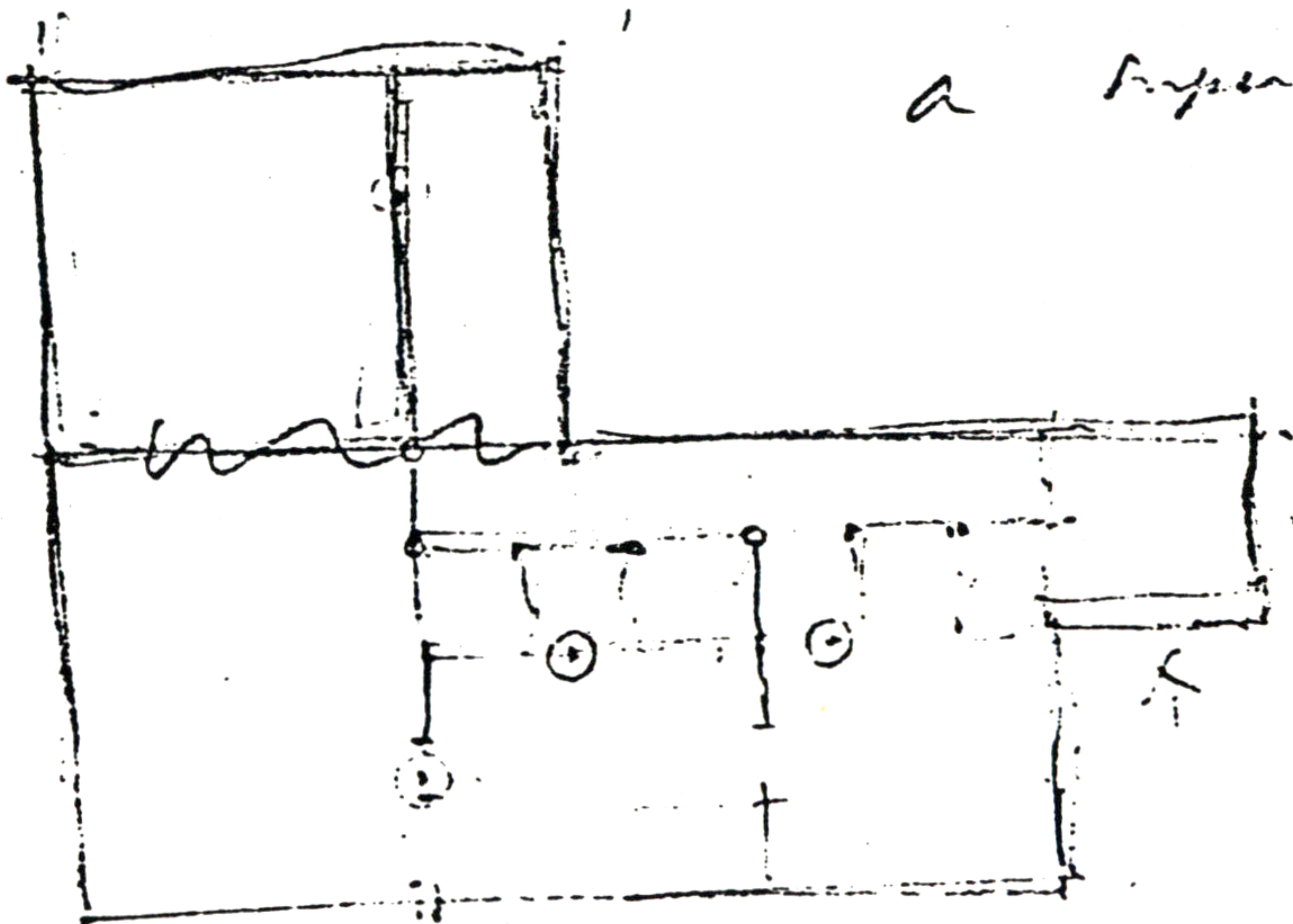
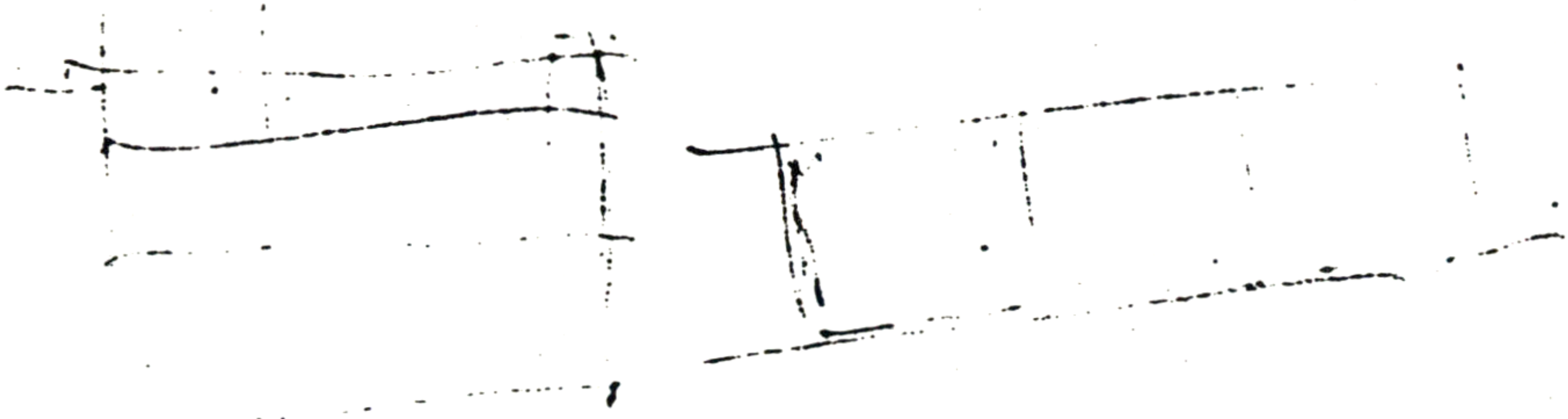
almost nothing to do with the arrangement of equally spaced points that is commonly called a grid.

What we shall define as a grid, is a far more general type of structure, of which the equally spaced point grid is a very special case.

Suppose that we have the outline of a superbay. All lines on this outline are vertical planes which can support weight. Now, suppose we introduce lines, within the superbay, one at a time make an arrangement of rectangles, within this superbay, large medium and small, in such a way that the whole a define a line, which spans the superbay: then a second line which spans the structure so created, and so on, until the complete system has been created, and the only rule followed, is that each new line added, "spans" the then existing array of lines. This resulting mesh, then has the possibility of being a continuous systems of walls and beams....

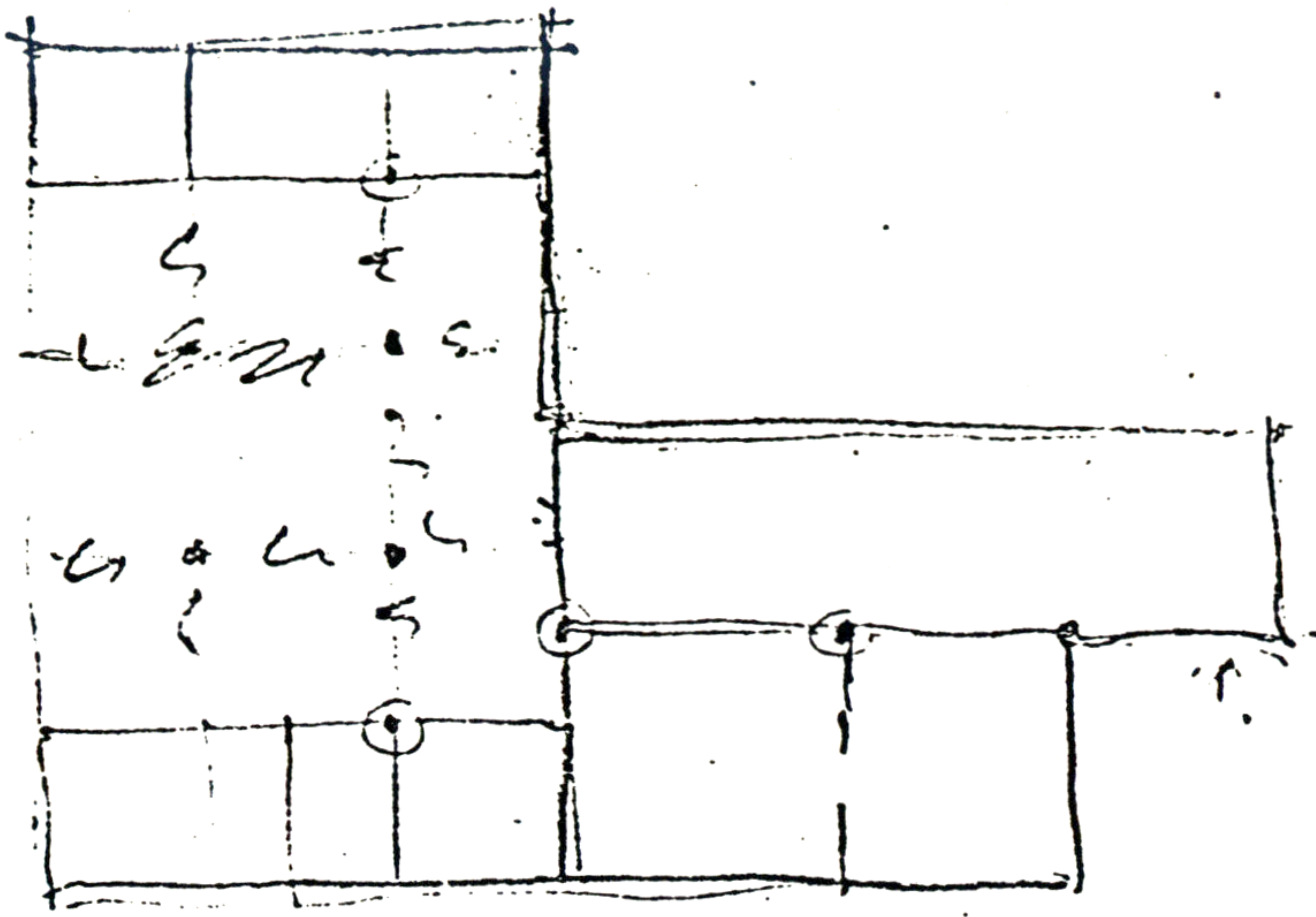
And, to ^{allow} ~~make~~ the architect builder
~~make~~ a proper connection with the houses he makes,
 no one person is responsible for more than 20 houses
 per year: ~~the~~ and the total production of houses is
 in a region, is decentralised to a point where there
 are ^{there are} ~~one~~ one architect-builder for every ~~1000~~ *1m*
 persons in the population... a relation comparable
 as many as there are grocers.

~~187~~



a workshop

On each floor, a "unit" of ~~houses~~



Let us assume that we have a system in which ^{an entire} a wall can act as a beam, to support the floor above.

A system of such walls, then, will support a whole floor, just as if it were a system of ^{Vierendel trusses} ~~maxima~~, or a ~~space~~ rectangular space frame.

In this case, it is not necessary for the wall below to receive the load of a wall above, since the wall above walls above distribute their load into the whole system.

But each Vierendel truss must either span the full distance, from wall to wall, or else, from a wall to a ~~truss~~ truss, or between two trusses.

Thus, if we can generate a grid, in the manner described above, to be a system of such trusses, there is then no need at all, for the walls to be supported on lower walls, since the whole system of trusses, is self supporting and spans by itself. Each place where such a truss ~~maxima~~ bears on the wall system below, would have to be a major vertical element.